
AdafruitCAP1188 Library Documentation

Release 1.0

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CircuitPython driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).

CHAPTER 2

Usage Example

See usage examples in the examples folder.

CHAPTER 3

Contributing

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

4.1 Zip release files

To build this library locally you'll need to install the `circuitpython-build-tools` package.

```
python3 -m venv .env
source .env/bin/activate
pip install circuitpython-build-tools
```

Once installed, make sure you are in the virtual environment:

```
source .env/bin/activate
```

Then run the build:

```
circuitpython-build-bundles --filename_prefix adafruit-circuitpython-cap1188 --
↳library_location .
```

4.2 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the `index.html` in your browser to view them. It will also (due to `-W`) error out on any warning like Travis will. This is a good way to locally verify it will pass.

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/cap1188_simpletest.py

```
1 import board
2 import busio
3
4 # I2C setup
5 from adafruit_cap1188.i2c import CAP1188_I2C
6 i2c = busio.I2C(board.SCL, board.SDA)
7 cap = CAP1188_I2C(i2c)
8
9 # SPI setup
10 # from digitalio import DigitalInOut, Direction
11 # from adafruit_cap1188.spi import CAP1188_SPI
12 # spi = busio.SPI(board.SCK, board.MOSI, board.MISO)
13 # cs = DigitalInOut(board.D5)
14 # cap = CAP1188_SPI(spi, cs)
15
16 while True:
17     for i in range(1, 9):
18         if cap[i].value:
19             print("Pin {} touched!".format(i))
```

5.2 adafruit_cap1188.cap1188

CircuitPython driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.2.1 Implementation Notes

Hardware:

- CAP1188 - 8-Key Capacitive Touch Sensor Breakout

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class adafruit_cap1188.cap1188.CAP1188

CAP1188 driver base, must be extended for I2C/SPI interfacing.

delta_count (*pin*)

Return the 8 bit delta count value for the channel.

recalibrate ()

Perform a self recalibration on all the pins.

recalibrate_pins (*mask*)

Recalibrate pins specified by bit mask.

sensitivity

The sensitivity of touch detections. Range is 1 (least) to 128 (most).

threshold_values ()

Return tuple of touch threshold values for all channels.

thresholds

Touch threshold value for all channels.

touched ()

Return 8 bit value representing touch state of all pins.

touched_pins

A tuple of touched state for all pins.

class adafruit_cap1188.cap1188.CAP1188_Channel (*cap1188, pin*)

Helper class to represent a touch channel on the CAP1188. Not meant to be used directly.

raw_value

The raw touch measurement.

recalibrate ()

Perform a self recalibration.

threshold

The touch threshold value.

value

Whether the pin is being touched or not.

5.3 adafruit_cap1188.i2c

CircuitPython I2C driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.3.1 Implementation Notes

Hardware:

- [CAP1188 - 8-Key Capacitive Touch Sensor Breakout](#)

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class `adafruit_cap1188.i2c.CAP1188_I2C` (*i2c, address=41*)
Driver for the CAP1188 connected over I2C.

5.4 `adafruit_cap1188.spi`

CircuitPython SPI driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.4.1 Implementation Notes

Hardware:

- [CAP1188 - 8-Key Capacitive Touch Sensor Breakout](#)

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class `adafruit_cap1188.spi.CAP1188_SPI` (*spi, cs*)
Driver for the CAP1188 connected over SPI.

CHAPTER 6

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